1. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{-1386}{14}}$$

A. Not a Real number

B. Integer

C. Irrational

D. Whole

E. Rational

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2. Simplify the expression below and choose the interval the simplification is contained within.

$$1 - 15 \div 2 * 20 - (9 * 18)$$

A. $[-164.38, -155.38]$

B. $[158.62, 165.62]$

C. $[-2846, -2839]$

D. $[-311, -310]$

E. None of the above

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3. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(2 - 7i)(-6 - 8i)$$

A. $a \in [43, 50]$ and $b \in [57.1, 59.8]$

B. $a \in [-13, -10]$ and $b \in [55.7, 56.3]$

C. $a \in [-75, -67]$ and $b \in [-27, -24]$

D. $a \in [-75, -67]$ and $b \in [24.2, 26.9]$

E. $a \in [43, 50]$ and $b \in [-59.7, -57.9]$

4. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-8 + 4i)(3 + 10i)$$

A. $a \in [12, 22]$ and $b \in [92, 98]$

B. $a \in [-26, -22]$ and $b \in [37, 44]$

C. $a \in [-66, -58]$ and $b \in [65, 73]$

D. $a \in [12, 22]$ and $b \in [-98, -89]$

E. $a \in [-66, -58]$ and $b \in [-74, -67]$

5. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{2730}{15}} + \sqrt{110}i$$

A. Not a Complex Number

B. Rational

C. Pure Imaginary

D. Irrational

E. Nonreal Complex

6. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{0}{15}} + \sqrt{6}i$$

A. Irrational

B. Pure Imaginary

C. Not a Complex Number

D. Rational

E. Nonreal Complex

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7. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{9216}{36}}$$

A. Whole

B. Rational

C. Irrational

D. Integer

E. Not a Real number

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8. Simplify the expression below and choose the interval the simplification is contained within.

$$12 - 16^2 + 8 \div 4 * 9 \div 6$$

A. $[268.9, 274.3]$

B. $[-243.4, -239.4]$

C. $[265.8, 270.5]$

D. $[-248.1, -243.2]$

E. None of the above

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9. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{9 - 44i}{-3 - 7i}$$

A. $a \in [-7, -5]$ and $b \in [0.5, 1.5]$

B. $a \in [280.5, 282]$ and $b \in [2.5, 4.5]$

C. $a \in [-4.5, -2]$ and $b \in [4.5, 7.5]$

D. $a \in [4, 5.5]$ and $b \in [194.5, 195.5]$

E. $a \in [4, 5.5]$ and $b \in [2.5, 4.5]$

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10. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-9 - 55i}{2 - 7i}$$

A. $a \in [6, 8]$ and $b \in [-5, -2.5]$

B. $a \in [-5.5, -3.5]$ and $b \in [7.5, 8.5]$

C. $a \in [366.5, 367.5]$ and $b \in [-5, -2.5]$

D. $a \in [-9, -6.5]$ and $b \in [-2, 1]$

E. $a \in [6, 8]$ and $b \in [-174.5, -172.5]$
